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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Objections

1. Claim 32 is objected to because of the following informalities: (1) "paper feeing section" in lines 7-8 should be -- paper feeding section --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "the link arm" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the camshaft" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the cam projection" in line 9. There is insufficient antecedent basis for this limitation in the claim.

In claim 15, it is unclear how many different link arms are claimed.

Also, it is unclear in claim 15 how many different camshafts and cam projections are claimed.

Claim 32 recites, "automatically adjusting the friction member based on said determining to dynamically **change an angle** formed **between the friction member**

Art Unit: 3653

pivotally attached to the paper feeding section.” (emphasis added). Dynamically change the angle between the friction member and what other element?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11, 15, 19-20, 23 and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Publication No. 57-180543.

Regarding claim 11, Figs. 1-3 and the English Abstract disclose a method to pick up a paper in a printing apparatus having a main body, at least one friction member installed to the main body to change a structure of the friction member to form an angle in relation to a leading edge of a sheet of paper picked up from a paper feeding section and elastically biased in a first direction; a cam unit movably installed to the main body to forcibly move the at least one friction member to a second direction while the cam unit is being moved by driving force; and a driving force supply unit movably installed to the main body to supply driving force to the cam unit at the time of being moved, the method including

supplying a signal indicative of a type of the sheet of paper to be picked up (see switches 27-29 in Fig. 1 and the English Abstract);

Art Unit: 3653

classifying the paper to a first type having a thickness within a predetermined range or a second type thicker than the first type of paper based on the signal (see English abstract);

supplying a driving force to the cam unit (including 21) when the paper is classified as the first type of paper;

pivotaly moving the at least one friction member (13) to the second direction by driving the cam unit (including 21); and

picking up the paper from the paper feeding section (near 12 in Fig. 2) when the at least one friction member (13) has been pivotaly moved in the second direction.

Regarding claim 15, as best understood, Figs. 1-3 and the English Abstract disclose that the operation of moving the at least one friction member (13) in the second direction comprises:

contacting the link arm (14) with the driving force supply unit (including 15) and receiving driving force to pivot the link arm (14),

connectively rotating the camshaft (23) linked to the link arm (14)(i.e., linked via 21, 19, 18, 16 and 15), and

compressing the rear surface of the at least one friction member (13) in the second direction while the cam projection (a projection on 21) is being rotated along with the camshaft (23), wherein the printing apparatus is provided with a link arm (14)

Art Unit: 3653

pivotably installed in the main body and the cam unit (including 21) includes a camshaft (23) having at least one cam projection (on 21) formed to be projected.

Regarding claim 19, Figs. 1-3 and the English Abstract disclose a method to pick up a plurality of papers in a printing apparatus, including

classifying the plurality of papers to a first type having a thickness within a predetermined range or a second type thicker than the first type (English Abstract); and

dynamically changing a structure of a friction member (13) and pivotally moving the friction member (13) based on the classification so that each of the plurality of papers are separately picked up.

Regarding claim 20, Figs. 1-3 and the English Abstract disclose a method to pick up paper in a printing apparatus, including

supplying a signal indicative of types of the paper to be picked up (via switches 27-29);

classifying the paper to a first type having a thickness within a predetermined range or a second type thicker than the first type based on the signal (English Abstract);

pivotally moving a friction member (13) upon classifying the paper as the first type or the second type; and

picking up the paper when the friction member (13) has been moved based on the classification.

Regarding claim 23, Figs. 1-3 and the English Abstract disclose that the structure of the friction member (13) allows a predetermined frictional force to be applied to a leading edge of the paper.

Regarding claim 26, Figs. 1-3 and the English Abstract discloses a method to pick up paper in a printing apparatus having friction member, comprising:

determining whether the paper belongs to a first type of paper or a second type of paper (determined before one of the switches 27-29 is pressed); and

pivotally moving the friction member (13) based on the determination, wherein an angle formed between the friction member (13) and a leading edge of the paper when the friction member (13) is moved in a first direction is larger than an angle formed when the friction member (13) is moved in a second direction upon determining that the paper belongs to the first type of paper. See, e.g., English Abstract.

Regarding claim 27, a frictional resistance applied to the leading edge of the paper by the friction member (13) will increase when the angle formed between the friction member (13) and the leading edge of the paper is reduced.

Regarding claim 28, a frictional resistance applied to the leading edge of the paper by the friction member (13) will decrease when the angle formed between the friction member (13) and the leading edge of the paper is increased.

4. Claims 19-21, 23 and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Publication No. 4-197931.

Regarding claim 19, Figs. 1-2 and the English Abstract disclose a method to pick up a plurality of papers in a printing apparatus, including

classifying the plurality of papers to a first type having a thickness within a predetermined range or a second type thicker than the first type (English Abstract); and

dynamically changing a structure of a friction member (including 3) and pivotally moving the friction member (including 3) based on the classification so that each of the plurality of papers are separately picked up.

Regarding claim 20, Figs. 1-2 and the English Abstract disclose a method to pick up paper in a printing apparatus, including

supplying a signal indicative of types of the paper to be picked up (via sensor 29 and read part 30);

classifying the paper to a first type having a thickness within a predetermined range or a second type thicker than the first type based on the signal (English Abstract);

pivotally moving a friction member (including 3) upon classifying the paper as the first type or the second type; and

picking up the paper when the friction member (including 3) has been moved based on the classification.

Regarding claim 21, Figs. 1-2 and the English Abstract disclose that the operation of supplying the signal comprises:

supplying a detection signal via a detection sensor (29) that detects the types of paper loaded in a paper feeding section (1) provided to the printing apparatus.

Regarding claim 23, the English Abstract discloses that the structure of the friction member (including 3) allows a predetermined frictional force to be applied to a leading edge of the paper.

Regarding claim 26, Figs. 1-2 and the English Abstract discloses a method to pick up paper in a printing apparatus having friction member, comprising:

determining whether the paper belongs to a first type of paper or a second type of paper (English Abstract); and

pivotaly moving the friction member (including 3) based on the determination, wherein an angle formed between the friction member (including 3) and a leading edge of the paper when the friction member (including 3) is moved in a first direction is larger than an angle formed when the friction member (including 3) is moved in a second direction upon determining that the paper belongs to the first type of paper.

Regarding claim 27, a frictional resistance applied to the leading edge of the paper by the friction member (including 3) will increase when the angle formed between the friction member (including 3) and the leading edge of the paper is reduced.

Regarding claim 28, a frictional resistance applied to the leading edge of the paper by the friction member (including 3) will decrease when the angle formed

between the friction member (including 3) and the leading edge of the paper is increased.

5. Claims 11-12, 19-21, 23, 26-28 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,449,162 (Sato et al.).

Regarding claim 11, Fig. 10 discloses a method to pick up a paper in a printing apparatus having a main body, at least one friction member installed to the main body to change a structure of the friction member to form an angle in relation to a leading edge of a sheet of paper picked up from a paper feeding section and elastically biased in a first direction; a cam unit movably installed to the main body to forcibly move the at least one friction member to a second direction while the cam unit is being moved by driving force; and a driving force supply unit movably installed to the main body to supply driving force to the cam unit at the time of being moved, the method including

supplying a signal indicative of a type of the sheet of paper to be picked up (i.e., signal from a sensor 133a and 133b or sensor 340);

classifying the paper to a first type having a thickness within a predetermined range or a second type thicker than the first type of paper based on the signal (see, e.g., column 13, lines 19-32);

supplying a driving force to the cam unit (including 130) when the paper is classified as the first type of paper;

pivotally moving the at least one friction member (including 126) to the second direction by driving the cam unit (including 130); and

picking up the paper (via 124) from the paper feeding section (near 122) when the at least one friction member (including 126) has been pivotally moved in the second direction.

Regarding claim 12, Fig. 10 show that the operation of supplying the signal comprises: supplying a detection signal from a detection sensor (i.e., sensor 133a and 133b or sensor 340) that detects the type of paper (i.e., thick or thin paper) loaded in the paper feeding section provided to the main body.

Regarding claim 19, Fig. 10 discloses a method to pick up a plurality of papers in a printing apparatus, including

classifying the plurality of papers to a first type having a thickness within a predetermined range or a second type thicker than the first type (see column 13, lines 19-25); and

dynamically changing a structure of a friction member (including 126) and pivotally moving the friction member (i.e., pivotally moving elements 127 and 126) based on the classification so that each of the plurality of papers are separately picked up. See, e.g., Fig. 10 and column 12, line 52 to column 13, line 36.

Regarding claim 20, Fig. 10 discloses a method to pick up paper in a printing apparatus, including

supplying a signal indicative of types of the paper to be picked up (e.g., via sensor 133a and 133b or sensor 340);

classifying the paper to a first type having a thickness within a predetermined range or a second type thicker than the first type based on the signal (see, e.g., column 13, lines 19-32);

pivotally moving a friction member (including 126) upon classifying the paper as the first type or the second type; and

picking up the paper (via 124) when the friction member (including 126) has been moved based on the classification.

Regarding claim 21, Fig. 10 discloses that the operation of supplying the signal comprises: supplying a detection signal via a detection sensor (sensor 133a and 133b or sensor 340) that detects the types of paper loaded in a paper feeding section (near 122) provided to the printing apparatus.

Regarding claim 23, Fig. 10 shows that the structure of the friction member (including 126) allows a predetermined frictional force to be applied to a leading edge of the paper.

Regarding claim 26, Fig. 10 discloses a method to pick up paper in a printing apparatus having friction member, comprising:

determining whether the paper belongs to a first type of paper or a second type of paper (see, e.g., column 13, lines 19-32); and

pivotally moving the friction member (including 126) based on the determination, wherein an angle formed between the friction member (including 126) and a leading edge of the paper when the friction member (including 126) is moved in a first direction is larger than an angle formed when the friction member (including 126) is moved in a second direction upon determining that the paper belongs to the first type of paper.

Regarding claim 27, a frictional resistance applied to the leading edge of the paper by the friction member (including 126) will increase when the angle formed between the friction member (including 126) and the leading edge of the paper is reduced.

Regarding claim 28, a frictional resistance applied to the leading edge of the paper by the friction member (including 126) will decrease when the angle formed between the friction member (including 126) and the leading edge of the paper is increased.

Regarding claim 32, Fig. 10 discloses a method for feeding a paper in a printing apparatus using a friction member pivotally attached to a paper feeding section of the printing apparatus, comprising:

determining whether the paper belongs to a first type of paper or a second type of paper having greater thickness than the first type of paper based on stored information indicative of a type of paper (see, e.g., column 10, lines 24-36); and

automatically adjusting the friction member (including 126) based on the determining to dynamically change an angle formed between the friction member

(including 126) pivotally attached to the paper feeding section (i.e., the paper feeding section is located in the central region of the apparatus shown in Fig. 10). Pivoting occurs about element 128.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,449,162 (Saito et al.) as applied to claims 11 and 20 above, and further in view of U.S. Patent No. 6,002,891 (Shin). The Saito et al. patent discloses a paper handling apparatus with a controller that receives a signal indicative of a paper type (e.g., based on paper thickness) from a detector (e.g., sensor 133a and 133b or sensor 340) and then outputs a signal to control the paper handling apparatus, but Saito et al. does not specifically state that the controller supplies a signal from a memory with stored information in relation to types of paper. See, e.g., Fig. 10 and column 13 of the Saito et al. patent.

The Shin patent discloses that it is well known to provide paper handling apparatus with a controller that receives a signal indicative of a paper type (e.g., thick paper or thin paper) from a sensor (500), and then compares the received signal to a look-up table with information related to paper type, in order to automatically output a signal that properly corresponds with the detected paper type, for operating the paper

handling device of Shin. See, e.g., Figs. 3-4 and column 4, lines 14-28 of Shin.

Providing the advantageous control method of Shin, which automatically outputs a signal that properly corresponds with the detected paper type, in the environment of the Saito et al. apparatus, will result in the controller of Saito et al. automatically outputting a control signal that properly corresponds with the detected paper type, from a memory with stored information in relation to the types of paper (i.e., the look-up table in the controller). Accordingly, all of the limitations of claims 13 and 22 are met.

Response to Arguments

7. Applicant's arguments with respect to claims 11-13 and 19-23 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

8. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 3653

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy Matecki can be reached on (571) 272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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